AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for reliably acquiring emitted-light intensity from the surface of a molecular array, the method comprising:

providing a probe-molecule excitation system;

providing an emitted-light photodetection system that produces an analog signal representative of the emitted-light intensity;

producing an analog signal by detecting light emitted from the surface of the molecular array;

adding a signal offset to the analog signal;

digitizing the analog signal to produce a digital signal;

subtracting a portion of the signal offset from the digital signal; and

integrating the digital signal to produce integrated digital signals that are each associated with a pixel in ~~a scanned~~ an image of the molecular array.

2. (original) The method of claim 1 wherein the photodetection system outputs an analog current signal that is converted to an analog voltage signal.

3. (currently amended) The method of claim 1 further including:

prior to ~~scanning a molecular array to acquire data~~ detecting light emitted from the surface of the molecular array, carrying out a dark scan with no molecular array in order to determine a mean intensity and standard deviation for background generated by ~~components within~~ the photodetection ~~and the signal processing systems of the molecular array scanner~~ system.

4. (original) The method of claim 3 wherein the portion of the signal offset subtracted from the digital signal is the signal offset minus four times the standard deviation of the background.

5. (currently amended) ~~Signal intensity data scanned from the surface of a molecular array~~ Integrated digital signals produced by the method of claim 1 encoded by:

storing representations of the signal intensity data in a machine readable medium;

transmitting representations of the signal intensity data over an electronic communications medium;

displaying the signal intensity data on display device; and

printing representations of the signal intensity data in a human readable medium.

6. (original) A set of computer instructions for carrying out the method of claim 1 encoded by one of:

storing the computer instructions in a machine readable medium;

transmitting the computer instructions over an electronic communications medium; and

printing the computer instructions in a human readable medium.

Claims 7-17 cancelled

18. (currently amended) A molecular array scanner comprising:

a probe-molecule excitation system;

an emitted-light photodetection system that produces an analog signal representative of the emitted-light intensity;

a signal-offset adder that adds an offset to the analog signal;

an analog-to-digital converter that digitizes the analog signal to produce a digital signal;

~~a~~ signal-offset-subtractor logic that subtracts a portion of the signal offset from the digital signal; and

a digital-signal integrator that integrates portions of the digital signal to produce integrated digital signals that are each associated with a pixel in a scanned image of the molecular array.

19. (currently amended) The molecular array scanner of claim 18 further including:

a memory component that stores a value that allows for calculation of the portion of the signal offset subtracted by the ~~subtractor~~ signal-offset-subtractor logic.

20. (original) The molecular array scanner of claim 19 further including:

dark scan logic that controls the molecular array scanner to carry out a dark scan with no molecular array in order to determine a mean intensity and standard deviation for background generated by components within the photodetection and the signal processing systems of the molecular array scanner prior to scanning a molecular array to acquire data.

21. (currently amended) The molecular array scanner of claim 20 wherein the dark scan logic wherein the portion of the signal offset subtracted by the ~~subtractor~~ signal-offset-subtractor logic is the signal offset minus four times the standard deviation for the background.

22. (currently amended) ~~Signal intensity data scanned from the surface of a molecular array~~ Integrated digital signals produced by the molecular array scanner of claim 18 encoded by:

storing representations of the signal intensity data in a machine readable medium;

transmitting representations of the signal intensity data over an electronic communications medium;

displaying the signal intensity data on display device; and

printing representations of the signal intensity data in a human readable medium.

Claims 23-27 cancelled

AMENDMENTS TO THE DRAWINGS

Formal Drawings are enclosed.